

What is claimed is:

1. A colour sensor having a plurality of photosensitive devices of differing and overlapping spectral responses and switching means arranged to read the electrical output of each photosensitive device separately and wherein the photosensitive devices are LEDs.
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2. A colour sensor according to claim 1, wherein the photosensitive devices are each oriented at different angles relative to a sample to be sensed.
- 10 3. A colour sensor according to claim 1, wherein a subset of the LEDs is used to illuminate a sample to be sensed and at least one of the remaining LEDs is used to sense light reflected from the sample.
- 15 4. A colour sensor according to claim 3, wherein the photosensitive devices are each oriented at different angles relative to a sample to be sensed.
- 20 5. A colour sensor according to claim 4, including angle switching means arranged to activate the LEDs in a predetermined sequence and to switch the electrical outputs of the non-activated LEDs to an output of the sensor, in a predetermined sequence, whereby the differing angles of the LEDs are used to produce a plurality of combinations of light incident on and sensed light reflected from a sample to be sensed.
- 25 6. A colour sensor having a plurality of LEDs each oriented to illuminate a sample to be sensed, from at least two different angles, the sensor further including LEDs arranged to sense light reflected from the sample.
- 30 7. A colour sensor according to claim 6, including switching means arranged to activate the LEDs in a predetermined sequence and to switch the electrical outputs of the non-activated LEDs to an output of the sensor, in a predetermined sequence, whereby the differing angles of the LEDs are used to produce a plurality of combinations of light incident on and sensed light reflected from a sample to be sensed.

8. A colour sensor comprising a plurality of LEDs, constructed to provide differing spectral light emissions and each oriented to receive reflected light from a predetermined sensing location.
- 5 9. A sensor according to claim 8, wherein each LED is oriented to direct emitted light at a predetermined sensing location and the sensor further includes switching means arranged to switch the LEDs to activate predetermined sets of the LEDs to emit light and to direct the electrical outputs of the non-activated LEDs to the sensor output.
- 10 10. A method of sensing colour comprising illuminating a sample to be sensed and arranging for at least one LED to receive reflected light from the sample whereby the electrical output of the LED is used to provide an indication of the reflected light energy in the emission band of the LED.
- 15 11. A method according to claim 10 including illuminating the sample using at least one LED, switching the LEDs in a predetermined sequence and switching the electrical outputs of the non-activated LEDs to an output of the sensor, in a predetermined sequence, whereby the differing angles of the
- 20 LEDs are used to produce a plurality of combinations of light incident on and sensed light reflected from a sample to be sensed.